

**WASHINGTON DEPARTMENT OF ECOLOGY**  
**ENVIRONMENTAL ASSESSMENT PROGRAM**  
**FRESHWATER MONITORING UNIT**  
**STREAM DISCHARGE TECHNICAL NOTES**

**STATION ID:** 32A105  
**STATION NAME:** Walla Walla River at Beet Road  
**WATER YEAR:** 2009  
**AUTHOR:** Mitch Wallace

**Introduction**

Watershed Description

The Walla Walla River is a tributary of the Columbia River, joining the Columbia just above Wallula Gap in southeastern Washington. The headwaters of the Walla Walla River lie in the Blue Mountains of northeastern Oregon. The Walla Walla River supports populations of spring Chinook salmon, summer steelhead, and bull trout. Land use in the watershed is mostly dryland and irrigated agriculture.

Gage Location

The gage house is located on the left bank near the Frog Hollow and Beet Road intersection at river mile 36.5. It is located approximately a quarter mile downstream of the Gardena Farms Irrigation District #13 diversion. The period of record for this station is June 2002 to the present.

Table 1.

Drainage Area (square miles)	125(Streamstats)
Latitude (degrees, minutes, seconds)	46° 01' 25" N
Longitude (degrees, minutes, seconds)	118° 25' 33" W

## Discharge

Table 2. Discharge Statistics.

Mean Annual Discharge (cfs)	265
Median Annual Discharge (cfs)	108
Maximum Daily Mean Discharge (cfs)	1710
Minimum Daily Mean Discharge (cfs)	1940
Maximum Instantaneous Discharge (cfs)	9
Minimum Instantaneous Discharge (cfs)	9
Discharge Equaled or Exceeded 10 % of Recorded Time (cfs)	756
Discharge Equaled or Exceeded 90 % of Recorded Time (cfs)	12
Number of Days Discharge is Greater Than Range of Ratings	0
Number of Days Discharge is Less Than Range of Ratings	0

Note: Statistics displayed in Table 2 may not include values in which the predicted discharge exceeds the range of ratings.

## Narrative

A recreational swimmers' dam was erected directly downstream of the gage. This activity falsely elevated stage readings. Consequently, the reported discharge is higher than actual discharge. The data from late July through September are considered to be questionable estimates.

The highest flow of the year occurred on January 2nd. This early season peak was caused by a significant rain-on-snow event.

## Error Analysis

Table 3. Error Analysis Summary.

Logger Drift Error (% of discharge)	0.9
Weighted Rating Error (% of discharge)	13.8
Total Potential Error (% of discharge)	14.7

## Rating Table(s)

Table 4. Rating Table Summary

Rating Table No.	12	603	
Period of Ratings	10/1/08 to 7/14/09	7/14/09 to 9/30/09	
Range of Ratings (cfs)	10 to 2850	8.5 to 2850	
No. of Defining Measurements	20	16	
Rating Error (%)	14.3	11.8	

Rating Table No.			
Period of Ratings			
Range of Ratings (cfs)			
No. of Defining Measurements			
Rating Error (%)			

Rating Table No.			
Period of Ratings			
Range of Ratings (cfs)			
No. of Defining Measurements			
Rating Error (%)			

## Narrative

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## Stage Record

Table 5. Stage Record Summary

Minimum Recorded Stage (feet)	2.36
Maximum Recorded Stage (feet)	6.52
Range of Recorded Stage (feet)	4.16
Number of Un-Reported Days	0
Number of Days Qualified as Estimates	79
Number of Days Qualified as Unreliable Estimates	0

## Narrative

<p>The estimated days were quality coded as a questionable estimate. This was caused by the presence of the recreational swimmer's dam downstream of the gage.</p>
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## Modeled Discharge

Table 6. Model Summary

Model Type (Slope conveyance, other, none)	n/a
Range of Modeled Stage (feet)	n/a
Range of Modeled Discharge (cfs)	n/a
Valid Period for Model	n/a
Model Confidence	n/a

## Surveys

Table 7. Survey Type and Date (station, cross section, longitudinal)

Type	Date
Station	10/22/2008

## Activities Completed

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